

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Tatsumi et al.

Art Unit: 2889

Application No: 10/554,188

Examiner: E. Breval

Confirmation No: 2644

Filed: October 21, 2005

Atty. Docket No: 40616-286346

For: DIAMOND ELECTRON EMITTER AND  
ELECTRON BEAM SOURCE USING  
SAME

Customer No:

**26694**  
PATENT TRADEMARK OFFICE

**STATEMENT OF THE SUBSTANCE OF THE INTERVIEW**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Interview Summary mailed July 7, 2010, Applicants submit the following Statements of the Substance of the Interview.

**Participants:** (1) Examiner Elmito Breval, (2) Examiner Busuk Won, (3) Michael E. Nelson (Applicants' Representative), and (4) Steve Schwarz (Applicants' Representative)

**Date of Interview:** April 29, 2010

**Type:** Telephonic

**A) Brief Description of the Nature of any Exhibit Shown or any Demonstration Conducted:**

None.

**B) Identification of the Claims Discussed:** 1 and 17.

**C) Identification of Specific Prior Art Discussed:** JP 04-245135 and JP 10-294077

**D) Identification of the Principal Proposed Amendments of a Substantive Nature:**

**Claim 1 (currently amended):** A diamond electron emission device comprising:

~~a light emitting device for irradiating light to~~

~~a cathode, wherein at least having an electron emission face [[is]] made of diamond; and~~

~~a light emitting device comprising the cathode and another element of the light emitting device forming a junction with the cathode;~~

~~the light emitting device comprises a junction formed between the cathode and another element of the electron emission device~~

~~wherein the light emitting device generates light at the junction and at least a portion of the light irradiates through the cathode toward the electron emission face.~~

**Claim 17 (currently amended):** An electron beam source utilizing a diamond electron emission device, comprising:

a cathode having an electron emission face made of diamond; and

wherein a light emitting device for irradiating [[a]] the cathode and a cathode, in which at least an electron emission face is diamond, wherein the light emitting device and the cathode are disposed together in an electron gun; and [[,]]

an anode separated by a space from said electron emission face;

wherein the light emitting device comprises the cathode and another element of the light emitting device forming a junction formed between with the cathode and another element of the electron emission device, and the light emitting device generates light at the junction and at least a portion of the light irradiates through the cathode toward the anode.

**E) Substance of Interview:** Claims 1 and 17 were discussed, and how the proposed amendments overcome the previous rejections of the claims.

**F) Other Pertinent Matters Discussed:** The Examiner requested Applicants to include, in the next response, a discussion of the use of the phrase "another element of the light emitting device" that forms the light-emitting junction with the cathode. Applicants representatives agreed to do so.

**G) General Results or Outcome of the Interview:** Agreement was reached that Examiner would update search when the response was filed.

Dated: July 16, 2010

Respectfully submitted,

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